REPUTATION OF LOW-QUALITY BIG 4 AND NON-BIG 4 AUDITORS: EVIDENCE FROM AUDITOR SWITCHES OF FORMER CHUOAOYAMA CLIENTS

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Abstract

We examine how an auditor's reputation for audit quality affects the selection of new auditors in a unique setting. Specifically, we investigate forced auditor switches after the collapse of ChuoAoyama and its successor, Misuzu, in a low litigation country, Japan, where the insurance value of auditing is minimal. We find that former ChuoAoyama clients with greater reputation concerns tended to switch away from Misuzu, a low-quality Big 4 audit firm. Our results also indicate that auditors' sensitivity to reputation decreased after the collapse of Misuzu, perhaps because of intensified capacity constraints and decreased differences in perceived audit quality between Big 4 and Non-Big 4 auditors after the audit scandal and the introduction of the J-SOX.*****

Keywords: Auditor Switch, Agency Cost, Reputation Loss

JEL classification: M42, G3

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1. Introduction

The purpose of this paper is to examine how an auditor's reputation for audit quality affects the selection of new auditors in a unique setting. Specifically, we investigate forced auditor switches after the collapse of ChuoAoyama and its successor, Misuzu, in a low litigation country, Japan.[1] With the minimal insurance value of auditing, the Japan setting is quite powerful for detecting the value of reputation for auditing. In addition, the setting of forced auditor switches provides us an opportunity to focus on the selection of new auditors, without considering the decisions regarding dismissal or resignation of the existing auditors.

The authors of other contemporary studies have also utilized the advantage of a low litigation environment to eliminate the insurance factor from determinants of the value of audit quality. For instance, Weber et al. (2008) investigate auditor switches in another low-litigation country, Germany. More recently, Numata and Takeda (2010) and Skinner and Srinivasan (2012) examine the effect of reputation loss of ChuoAoyama on market prices and auditor switches.[2] Although these studies provide evidence of the importance of an auditor's reputation for audit quality, our study takes a further step to investigate how concerns for reputation affect firms' selection of new auditors. In particular, we focus on whether firms concerned about reputation choose low-quality Big 4 or Non-Big 4 audit firms, and, by dividing our examination into three phases, we observe how the sensitivity to reputation changes over time.

Earlier studies in the U.S. have documented that the Big N auditors provide higher-quality audits than do the Non-Big 4 audit firms (DeAngelo 1981; Teoh

[1] During the period of our analysis, Japanese firms were not subjected to mandatory rotation of the audit firm or of the partner.

[2] Another related study is done by Hope and Langli (2010), which examine the relationship between auditor independence and audit fees in Norway with low litigation risk.

and Wong 1993) and thus receive a high-fee premium for their services (Francis and Wilson 1988; Simunic and Stein 1987; DeFond 1992). However, Chang et al. (2010) argue that this difference in perceived audit quality changed after 2004, because the demise of Arthur Andersen and the regulatory changes, including the Sarbanes-Oxley (US-SOX hereafter) 404 implementation, decreased differences in perceived audit quality between Big 4 and Non-Big 4 audit firms as well as intensifying capacity constraints. Chang et al. (2010) find relatively more positive stock price responses to the news about switches from a Big 4 audit firm to a smaller audit firm for the period between 2004 and 2006 than for the prior period.

Japan also experienced the collapse of Big 4 audit firms and the enactment of the so-called Japanese Sarbanes-Oxley Act (J-SOX hereafter) in 2006. This raises a conjecture that firms have become more receptive to Non-Big 4 audit firms than before, because of the intensified capacity constraints and the decreased gap in perceived audit quality between Big 4 and Non-Big 4 audit firms. The difference from the Enron/Andersen scandal is that two audit firms, Aarata and Misuzu, succeeded the troubled ChuoAoyama. While Aarata was supported by its global partner, PricewaterhouseCoopers (PwC hereafter), which helped to preserve its reputation for audit quality, Misuzu was regarded as a lower-quality Big 4 audit firm. Thus, in the present study, we examine how firms concerned about reputation tended to choose new auditors from among four choices, i.e., Aarata, Misuzu, the other Big 4 audit firms, and Non-Big 4 audit firms. Our analyses indirectly provide a hint to the question about whether PwC's attempt to save the reputation of Aarata was successful.

The setting for our analysis also corresponds to the forced auditor switches, used by Blouin et al. (2007). Blouin et al. (2007) take advantage of a unique setting created by the collapse of Arthur Andersen, which forced its clients to select new auditors. The forced auditor switches enable them to focus on the selection of new auditors without considering the decisions regarding dismissal or resignation of the existing auditors. In the present study, we use this same methodology to investigate a similar setting of forced auditor switches in Japan, which was created by the collapse of ChuoAoyama and its successor, Misuzu, after the revelation of their audit failures. The difference between our method and that of Blouin et al. (2007) lies in our inclusion of additional analysis of switches to Non-Big 4 audit firms in a low litigation environment, to eliminate an implicit insurance factor.

In sum, our objectives in the present study are threefold. First, we intend to determine how reputation for audit quality affects the selection of new auditors, when they are forced to change auditors in a low litigation environment. Second, we aim to learn how reputation factors affect new alignments with Big 4 or Non-Big 4 auditors. Third, we want to know whether these factors were changed by the intensified capacity constraints and the decreased differences in perceived audit quality between Big 4 and Non-Big 4 audit firms after the collapse of ChuoAoyama and Misuzu and the resulting introduction of the J-SOX. Our univariate analysis shows that former ChuoAoyama clients with greater reputation concerns tended to switch away from ChuoAoyama's successor, Misuzu, the low-quality Big 4 auditor. We also find that auditors' sensitivity to reputation decreased after the collapse of Misuzu.

The rest of this article is organized as follows. The next section provides background information on auditor switches from ChuoAoyama and Misuzu in Japan. Literature review and predictions are given in the third section. The fourth section describes the research design and data. The fifth section discusses the empirical results. Concluding remarks are provided in the sixth section.

2. Auditor switches from ChuoAyama / Misuzu

This section briefly describes the background information on accounting scandals involving ChuoAoyama and its successor, Misuzu.[3] ChuoAoyama was one of Japan's Big 4 audit firms, which audited a number of big-name clients, including Toyota, Sony, and Nippon Steel Corporation, and joined the global network of PwC. ChuoAoyama's collapse was directly related to the accounting fraud committed by its client, Kanebo, a large manufacturer of cosmetics and textiles in Japan. This scandal was comparable to the U.S. Enron scandal in size and social impact.

In October 2004, Kanebo reported that former executives had committed accounting fraud from April 2001 to March 2003. In April 2005, Kanebo admitted having falsified financial statements over a period of 5 fiscal years (FYs) ending in March 2004 by exaggerating its earnings improperly by 215 billion yen, a historical high. The objective of the fraud was to avoid bankruptcy, because Kanebo had excess liability, amounting to approximately 250 billion yen in FY 1998.

The involved Kanebo executives were arrested and indicted. Three former executives including the former president were arrested in July 2005 for their violation of the Securities Exchange Law. In addition, four ChuoAoyama accountants, who helped the former Kanebo executives to cover up the losses and certified Kanebo's misrepresented financial reports, were arrested in September 2005. The Tokyo District Court sentenced the former president to two years' imprisonment and three years' probation in October

[3] Numata and Takeda (2010) and Skinner and Srinivasan (2012) provide more detailed information on the ChuoAoyama scandal.

2005. The Court also sentenced the former vice president and three accountants to 1.5 years' imprisonment and 3 years' probation in March 2006.

Unlike Arthur Andersen, ChuoAoyama itself was exempt from criminal charges (Although Arthur Andersen was originally found guilty of criminal charges, the verdict was subsequently overturned by the Supreme Court in 2005). However, in May 2006, the Financial Service Agency (FSA) deregistered the arrested accountants and ordered the suspension of ChuoAoyama's statutory auditing service for two months starting in July. This was the first time that a major audit firm in Japan was ordered to suspend its core auditing business. This order accelerated auditor switches of ChuoAoyama clients to rival companies.

At that time, PwC, ChuoAoyama's affiliate in the U.S., was deeply concerned about the reputation loss of its global partner and helped approximately 900 of ChuoAoyama's accountants to establish a new company named PwC Aarata in June 2006. The remaining ChuoAoyama changed its name to Misuzu in September 2006, but terminated its operation in July 2007 after the revelation in December 2006 of another accounting fraud, this time involving the Nikko Cordial Corporation.

The high-profile accounting scandals in Japan generated discussion on reinforcing corporate governance and the accounting profession. To restore investors' confidence and regulate internal control over financial reporting, the Japanese Diet passed a bill in June 2006 called the Financial Instruments and Exchange Law (FIEL), which included the so-called the Japanese Sarbanes-Oxley Act (J-SOX). Similar to the US-SOX, the J-SOX required listed firms to submit internal control reports from the fiscal year starting in April 2008.

The collapse of Big 4 audit firms and the enactment of the J-SOX raise a conjecture that firms have become more receptive to Non-Big 4 audit firms than before, because of the intensified capacity constraints and the decreased gap in perceived audit quality between Big 4 and Non-Big 4 audit firms. We note that two audit firms, Aarata and Misuzu, succeeded the troubled ChuoAoyama. While Aarata was supported by its global partner, PwC, which helped to preserve its reputation for audit quality, Misuzu was regarded as providing lower-quality audit services. By examining how firms concerned about reputation selected new auditors, we also consider whether PwC's attempt to save the reputation of Aarata was successful.

To see how the collapse of two big audit firms affected market structure of the audit industry, Table 1 provides a descriptive analysis of changes in the market share of the Japanese audit market between spring 2004 and spring 2008 (To be more precise, the FIEL, or the J-SOX, incorporates the Amendment of the Securities and Exchange Law, which was approved and enacted at the 164th Diet session on June 7, 2006 and promulgated on June 14, 2006. Please refer to Seino and Takeda (2009) for the background information on the introduction of the Japanese Sarbanes-Oxley Act of 2006). Before the collapse of ChuoAoyama, the Big 4 auditors (with their affiliations to the worldwide audit networks) were Azsa (KPMG), Tohmatsu (Deloitte), ShinNihon (Ernst & Young) and ChuoAoyama (PwC).

Table 1. Distribution of listed companies across time

This table shows the number of all listed clients of Big 4 and Non-Big 4 audit firms in Japan for the period between 2004 and 2008. Big 4 auditors refer to the following audit firms (with their affiliations with Big 4 audit networks worldwide) - Azsa (KPMG), Tohmatsu (Deloitte), ShinNihon (Ernst & Young), and ChuoAoyama/Misuzu/Aarata (PwC). Non Big 4 auditors are all the other audit firms.

	2004		2005		2006		2007		2008	
	Number	Share	Number	Share	Number	Share	Number	Share	Number	Share
Azsa	612	(16.8%)	630	(16.8%)	668	(17.5%)	730	(18.5%)	825	(20.9%)
Tohmatsu	809	(22.2%)	852	(22.8%)	863	(22.6%)	921	(23.4%)	1,001	(25.4%)
ShinNihon	793	(21.7%)	802	(21.4%)	827	(21.6%)	895	(22.7%)	1,122	(28.5%)
ChuoAoyama	788	(21.6%)	812	(21.7%)	829	(21.7%)	0	(0.0%)	0	(0.0%)
Misuzu	0	(0.0%)	0	(0.0%)	0	(0.0%)	579	(14.7%)	0	(0.0%)
Aarata	0	(0.0%)	0	(0.0%)	0	(0.0%)	72	(1.8%)	88	(2.2%)
(less: multiple auditors)	8	(0.2%)	4	(0.1%)	3	(0.1%)	7	(0.2%)	1	(0.0%)
Big 4 auditors	2,994	(82.0%)	3,092	(82.6%)	3,184	(83.3%)	3,190	(81.0%)	3,035	(77.0%)
Non-Big 4 auditors	655	(18.0%)	651	(17.4%)	640	(16.7%)	749	(19.0%)	907	(23.0%)
All listed companies	3,649	(100.0%)	3,743	(100.0%)	3,824	(100.0%)	3,939	(100.0%)	3,942	(100.0%)

Note: This table is based on spring issues of *Japan Company Handbook* between 2004 and 2008.

For the period between spring 2004 and spring 2006, ChuoAoyama's share of the auditors' market was stable at around 21 percent, despite the revelation of Kanebo's accounting fraud. After the collapse of ChuoAoyama, in spring 2007, Misuzu's share was 14.7 percent, while Aarata's share was only 1.8 percent. Clearly, Misuzu and Aarata did not gain all of the former ChuoAoyama clients, and both the other Big 4 auditors and Non-Big 4 auditors increased their shares. The increase in market share of the other Big 4 auditors and Non-Big 4 auditors continued in spring 2008, after the collapse of Misuzu.

Table 2 provides another descriptive analysis that shows auditor switches among Japanese auditors for the period between spring 2004 and spring 2008. Before the collapse of ChuoAoyama, the number of ChuoAoyama clients that changed auditors was only 30 from spring 2004 to spring 2006. During the period between spring 2006 and spring 2007, Misuzu and Aarata accepted 541 and 71 former ChuoAoyama clients, respectively (66.4 percent and 8.7 percent of all former ChuoAoyama clients, respectively). The other Big 4 auditors accepted 138 former ChuoAoyama clients (16.9 percent), while Non-Big 4 auditors accepted 65 former ChuoAoyama clients (8.0 percent) (A total of 815 clients left ChuoAoyama, which is fewer than the total of 829 listed in Table 1. The difference corresponds to the number of firms delisted from spring 2006 to spring 2007). After the collapse of Misuzu, the other Big 4 auditors accepted 438 former Misuzu clients (77.2 percent), while Non-Big 4 auditors accepted 120 former Misuzu clients (21.2 percent) (A total of 567 clients left Misuzu, which is fewer than the total of 579 listed in Table 1. The difference corresponds to the number of firms delisted from spring 2007 to spring 2008). In sum, Tables 1 and 2 provide evidence for a significant migration of former ChuoAoyama clients to Non-Big 4 audit firms as well as to the other Big 4 audit firms.

Table 2. Japanese auditor changes across time

This table shows the number of all listed clients that changed auditors in Japan for the period between 2004 and 2008.

2004→05	From / To	Azsa	Tohmatsu	ShinNihon	ChuoAoyama	Non-Big 4 auditors	Sum
	Azsa		7	3	1	3	14
	Tohmatsu	5		1	5	3	14
	ShinNihon	1	2		3	5	11
	ChuoAoyama	4	3	0		3	10
	Non-Big 4 auditors	5	1	9	5	16	36
	Sum	15	13	13	14	30	85

2005→06	From / To	Azsa	Tohmatsu	ShinNihon	ChuoAoyama	Non-Big 4 auditors	Sum
	Azsa		0	3	2	1	6
	Tohmatsu	10		2	4	6	22
	ShinNihon	5	3		1	3	12
	ChuoAoyama	4	4	4		8	20
	Non-Big 4 auditors	7	4	8	4	25	48
	Sum	26	11	17	11	43	108

2006→07	From / To	Azsa	Tohmatsu	ShinNihon	Misuzu	Aarata	Non-Big 4 auditors	Sum
	Azsa		2	4	1	0	21	28
	Tohmatsu	7		7	0	0	11	25
	ShinNihon	4	8		0	0	15	27
	ChuoAoyama	50	34	54	541	71	65	815
	Non-Big 4 auditors	3	6	0	0	0	26	35
	Sum	64	50	65	542	71	138	930

2007→08	From / To	Azsa	Tohmatsu	ShinNihon	Aarata	Non-Big 4 auditors	Sum
	Azsa		3	2	3	31	39
	Tohmatsu	5		4	0	20	29
	ShinNihon	7	3		2	27	39
	Misuzu	101	95	242	9	120	567
	Aarata	0	1	0		2	3
	Non-Big 4 auditors	14	7	16	1	70	108
	Sum	127	109	264	15	270	785

Note: This table is based on spring issues of *Japan Company Handbook* between 2004 and 2008.

3. Literature review and hypotheses

3.1 Literature Review

Prior studies state that the value of audit quality is based on two competing hypotheses: reputation hypothesis and insurance hypothesis. Under the reputation hypothesis, the value of audit quality is related to monitoring and certifying services provided by auditors to mitigate agency problems among stakeholders. Under the insurance hypothesis, auditors are motivated to provide high-quality service to avoid legal liabilities (Simunic 1980; Dye 1993).

There are two lines of research that investigates factors affecting the value of audit quality. The first line of studies rests on the assumption that large auditors provide better audit quality and thus enjoy better reputations than small auditors (Balvers et al. 1988; Beatty 1989; Clarkson and Simunic 1994; Datar et al. 1991; Teoh and Wong 1993). However, both the reputation hypothesis and the insurance hypothesis can explain a positive correlation between auditor size and audit quality, because large auditors are expected to provide more coverage in the event of litigation than small auditors (Willenborg 1999). To eliminate the reputation factor, Willenborg (1999) focuses on start-up company IPOs and provided evidence to support the insurance hypothesis.

The second line of research takes advantage of a unique setting caused by well-known accounting

scandals including the Laventhol and Horwath (L&H) bankruptcy in 1990 and the Enron/Andersen scandal in 2001, which have provided the opportunity to detect the effect of deteriorating auditor quality on economic value (Menon and Williams 1994; Baber et al. 1995; Chaney and Philipich 2002; Barton et al. 2005; Krishnamurthy et al. 2006; Rauterkus et al. 2005; Cahan et al. 2010). It should be noted, however, that both the reputation loss of auditors and reduced insurance coverage provided by the auditor could lower the economic value of auditing, which is measured by stock returns after the accounting scandals or associated with auditor switches.

Recently, several studies have attempted to control insurance factors to detect reputation factors. For instance, Krishnamurthy et al. (2006) examine the stock price reactions of former Andersen clients to the replacement of Andersen with other auditors. They find a negative return when a poorer-quality auditor was selected as a new auditor, indicating that this negative return was not due to the lost insurance value but rather to the lost reputation. In addition, Weber et al. (2008) control for the insurance factor by using the case of the KPMG/ComROAD AG scandal in a low-litigation country, Germany, and conclud that auditor reputation loss played an important role in auditor switches and negative stock returns of former clients.

In a similar manner, by utilizing a low litigation setting in Japan, Numata and Takeda (2010) and Skinner and Srinivasan (2010) describe the effect of reputation loss of ChuoAoyama on market prices and auditor switches. Although these studies provide evidence of the importance of an auditor's reputation for audit quality, our study takes a further step to investigate how concerns for reputation affect firms' selection of new auditors. In particular, we focus on whether firms concerned about reputation choose low-quality Big 4 or Non-Big 4 audit firms, and, by dividing our examination into three phases, we observe how the sensitivity to reputation changes over time.

As discussed earlier, prior studies in the U.S. have documented that the Big N auditors provide higher-quality audits than do the Non-Big 4 audit firms (DeAngelo 1981; Teoh and Wong 1993) and thus receive a high-fee premium for their services (Francis and Wilson 1988; Simunic and Stein 1987; DeFond 1992). However, recent studies have questioned this difference in perceived audit quality. For instance, Chang et al. (2010) report relatively more positive stock price responses to the news about switches from a Big 4 audit firm to a smaller audit firm for the period between 2004 and 2006 than for the prior period. They argue that such change was caused by decreased differences in perceived audit quality between Big 4 and Non-Big 4 audit firms as well as intensified capacity constraints after the demise of Arthur Andersen and the regulatory changes, including the Sarbanes-Oxley 404 implementation.[4]

We believe that the question posed by Chang et al. (2010) is important in the Japanese case, too, because Japan also experienced the collapse of Big 4 audit firms and the enactment of the J-SOX in 2006. This may have intensified capacity constraints and decreased the gap in the perceived audit quality between Big 4 and Non-Big 4 audit firms. As a result, firms may have become more receptive to Non-Big 4 audit firms than they had been before 2006. Because two audit firms, Aarata and Misuzu, succeeded to the troubled ChuoAoyama, it should be especially interesting to examine whether firms less concerned about reputation selected a new auditor from among these two firms or Non-Big 4 audit firms.

Our setting also corresponds to the forced auditor switches, used by Blouin et al. (2007). Conventional wisdom states that auditor switches involve two actions: dismissal or resignation of the present auditor and the selection of a new auditor. The authors of many prior studies have examined which firm characteristics are associated with auditor switches (Johnson and Lys 1990; Krishnan and Krishnan 1997; Shu 2000; Blouin et al. 2007; Chen and Zhou 2007; Landsman et al. 2009). Although some of them focus on factors that affect the joint decision of firing and hiring auditors, others attempt to disentangle the two decisions. For instance, Krishnan and Krishnan (1997) treat auditor resignations and dismissals as two separate decisions. Chen and Zhou (2007) focus on dismissal of former Andersen clients by examining the role of audit committees, which enabled them to differentiate the timing of auditor dismissal and the choice of new auditors.

Alternatively, Blouin et al. (2007) take advantage of a unique setting created by the collapse of Arthur Andersen, which forced its clients to select a new auditor. The forced auditor switches enabled them to focus on selection of new auditors without considering the decisions regarding dismissal or resignation of the existing auditors. They found that firms with larger agency costs were more likely to switch auditors, while those with larger switching costs were more likely to follow their former auditor. In the present study, we follow the methodology of Blouin et al. (2007) by investigating a similar setting of forced auditor switches in Japan, which was created by the collapse of ChuoAoyama and its successor, Misuzu, after the revelation of their audit failures.

[4] Related literature in the U.S. is the work by Landsman et al. (2009), which examine auditor switches to and from the Big 4 auditors in the pre- and post-Andersen scandal. They find a decrease in the sensitivity to client risk as well as an increase in the sensitivity to client misalignment, concluding that Big 4 auditors attempted to rebalance their client portfolios in response to post-Andersen capacity constraints caused by the supply of former Andersen clients, without adjusting their sensitivity to client risk.

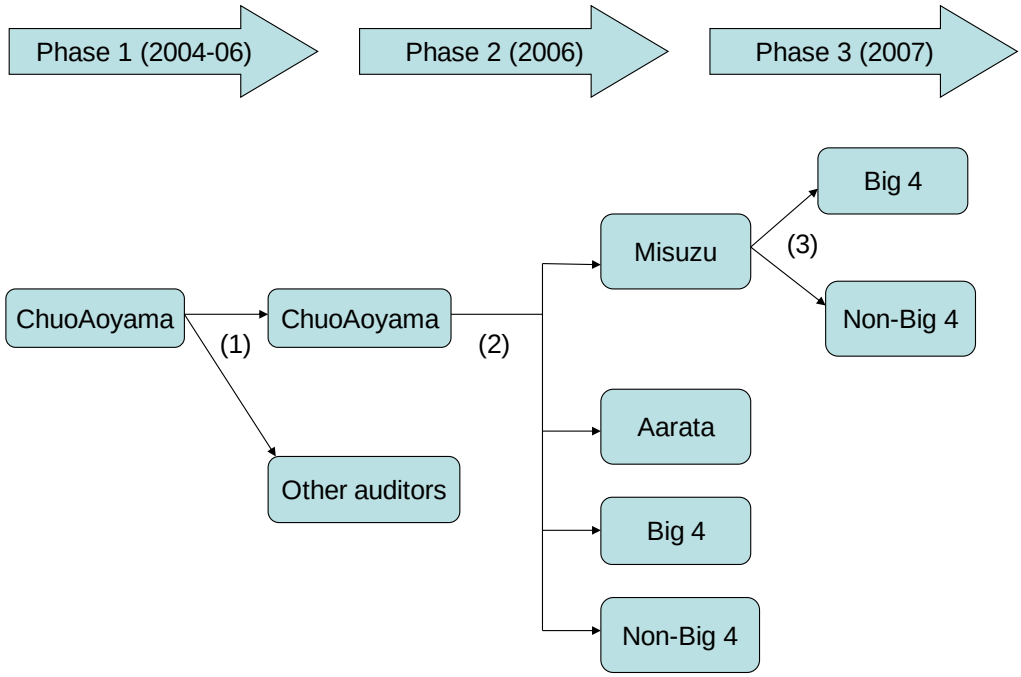
The difference from Blouin et al. (2007) lies in our unique setting of a low-litigation country. Blouin et al. (2007) only investigate switches to the remaining Big 4 auditors. This allowed them to focus on agency and switching costs involved in the selection of a new auditor, by eliminating an implicit insurance factor that might have been associated with switches to a Non-Big 4 auditor. In the present study, we take advantage of a low litigation setting in Japan, which allows us to investigate not only switches to the other Big 4 auditors but also switches to Non-Big 4 auditors, without considering the insurance factor.

In sum, our contributions come mainly from two sources, that is, the focus on forced auditor switches to Big 4 and Non-Big 4 audit firms and the comparison of three periods related to the ChuoAoyama scandal. The comparison of three periods is expected to provide insights into how the change in environment affected firms' sensitivity to reputation factors.

3.2 Hypotheses development

To investigate how reputation for audit quality affects selection of new auditors, we focus on auditor changes in three periods associated with the collapse of ChuoAoyama and Misuzu. Figure 1 presents a summary of three phases. The first phase (Phase 1) is the reference period between spring 2004 and spring 2006, when ChuoAoyama's audit failure was revealed and a number of its clients changed auditors voluntarily (More detailed explanation of each period is provided in the fourth section). The second phase (Phase 2) is between summer and autumn 2006, when ChuoAoyama clients were forced to change auditors. The third phase (Phase 3) is between summer and autumn 2007, when Misuzu clients were forced to change auditors.

Figure 1. Timeline of the analysis



In the subsequent sections, we examine the following options faced by a group of former ChuoAoyama clients and attempt to clarify how these actions are related to clients' reputation factors:

Phase	Group of clients	Options
1	All ChuoAoyama clients	(1) ChuoAoyama, or (2) Other auditors.*
2	All ChuoAoyama clients	(1) The other Big 4 audit firms, (2) Non-Big 4 audit firms, (3) Aarata, or (4) Misuzu.
3	All Misuzu clients	(1) The other Big 4 audit firms or (2) Non-Big 4 audit firms

Note: We include Aarata in the Big 4 audit firms in Phase 3, rather than examine Aarata separately, because very few firms switched away from Misuzu to Aarata in Phase 3, as shown in Table 2.

* We combine both the other Big 4 and Non-Big 4 audit firms in the category "other auditors" in Phase 1 because very few firms switched away from ChuoAoyama in Phase 1, as shown in Table 2.

Economic theory suggests that profit-maximizing firms attempt to minimize potential costs arising from the reputation loss of audit firms when selecting a new auditor. This indicates that firms with greater reputation concerns tended to change auditors in Phase 1, because audit failure damaged the reputation of ChuoAoyama. In Phase 3, firms with greater reputation concerns were more likely to choose Big 4 audit firms as their new auditors, because Big 4 auditors are regarded providing higher-quality audit services than Non-Big 4 auditors. Thus, our hypotheses for Phases 1 and 3 are as follows:

In contrast, predictions for Phase 2 need more careful examination. In Phase 2, former ChuoAoyama clients faced four options: the other Big 4 audit firms, Non-Big 4 audit firms, Aarata, or Misuzu. We reasonably assume that reputation for audit quality was the highest for the other Big 4 audit firms, while it was the lowest for Misuzu, a main successor of ChuoAoyama with no help from PwC. Between these two companies we conjecture that Aarata's reputation is higher than that of Non-Big 4 audit firms, because Aarata is backed up by PwC to keep reputation for high-quality audit. Skinner and Srinivasan (2010) also characterize Aarata as the high-quality spin-off. In sum, our hypotheses regarding the relationship between auditor switches and auditor reputation are as follows:

Hypothesis 1: *Former ChuoAoyama clients with greater reputation concerns tended to change auditors in Phase 1.*

Hypothesis 2: *Former ChuoAoyama clients with greater reputation concerns were likely to switch to the other Big 4 auditors as their first choice, Aarata as their second choice, Non-Big 4 audit firms as their third choice, and Misuzu as their last choice in Phase 2.*

Hypothesis 3: *Former Misuzu clients with greater reputation concerns tended to switch to Big4 audit firms than Non-Big 4 audit firms in Phase 3.*

The effect of reputation factors on auditor switches may have changed over time. We predict that reputation factors would have more greatly affected the auditor switches of former ChuoAoyama clients in Phase 2 than in Phase 1. As seen in Table 2, most of the former ChuoAoyama clients did not change auditors in Phase 1, indicating that many clients were not aware of the severity of the events. In addition, the effect of reputation factors on auditor switches is predicted to have been smaller in Phase 3 than in Phase 2, because of the heightened capacity constraints and decreased differences in perceived audit quality between Big 4 and Non-Big 4 auditors after the ChuoAoyama scandal and the introduction of the J-SOX, even though these events were likely to increase the demand for quality audit services at the same time. The latter prediction follows the results of Chang et al. (2010) that argue that the demise of Arthur Andersen and the enactment of the US-SOX decreased differences in perceived audit quality between Big N and Non-Big N audit firms.

Hypothesis 4: *Reputation factors would have more greatly affected the auditor switches of former ChuoAoyama clients in Phase 2 than in Phases 1 and 3.*

4. Research design and data

4.1 Research design

To examine how reputation factors affected the choice of auditors, we employ both univariate and multivariate analyses. We first compare several variables that represent firm characteristics among groups of firms. Our choice of variables is based on prior literature on auditor switches and corporate governance. The summary of variable definitions is presented in the Appendix.

Our target variables are the first four variables, namely, *Emerging*, *Foreign*, *Size*, and *Leverage*, which are associated with reputation factors. *Emerging* is a dummy variable, which takes 1 if the client is listed on an emerging stock exchange, including JASDAQ, Mothers, and Heracles, and 0 otherwise. These stock exchanges list mainly venture and small- and medium-sized firms in Japan. Unlike established firms listed on major stock exchanges, such as the Tokyo Stock Exchange, firms listed on the emerging stock exchanges are obliged to keep less strict regulations and thus are more likely to be considered risky by large audit firms. Thus, we expect that firms listed on emerging stock exchanges would have been less likely to change auditors in Phase 1. When they changed auditors, they would have been less likely to switch to auditors with high reputation in Phases 2 and 3.

Foreign is the percentage of foreign shareholders among total shareholders. Ahmadjian and Robbins (2005) report that for the period between 1990 and 2000, the ownership of foreign investors in Japanese shares increased from 4.2% to 13.2%. Foreign shareholders are considered to have larger influence on auditing and accounting practices in Japan than domestic shareholders, because foreign shareholders tend to demand more transparency in accounting presentation and independent audits than domestic investors. This indicates that firms with high ratios of foreign shareholders are expected to be more concerned about the potential reputation loss of their audit firm.[5] Thus, we expect that firms with foreign shareholders' ratio would have been more likely to change auditors in Phase 1. When they changed auditors, they would have been more likely to choose auditors with high reputation in Phases 2 and 3.

[5] Numata and Takeda (2010) find that negative market reactions to the audit failure of ChuoAoyama were mitigated if firms have a high foreign shareholders' ratio.

Size is defined as the natural logarithm of total assets. This variable is often used as a proxy for reputation factors.[6] Large firms could be reasonably assumed to have more agency conflicts than small firms and therefore be more concerned about the reputation loss of their audit firm, because they depend more on certification issued by their auditors to mitigate agency conflicts. Blouin et al. (2007) show that large firms tended to change auditors in the post-conviction date of Arthur Andersen. Thus, we expect that large firms would have been more likely to change auditors in Phase 1. When they changed auditors, they would have been more likely to choose auditors with high reputation in Phases 2 and 3.

Leverage is defined as total debts divided by total assets. In prior accounting and finance literature in the U.S., *Leverage* is also used to capture agency conflicts between shareholders and debt holders and thus agency costs arising from monitoring by debt holders (Barton 2005; Blouin et al. 2007). To reduce agency costs firms with high leverage ratio are expected to depend more on certification issued by their auditors, and thus be more concerned about the reputation of audit firms. Thus, we expect that firms with high leverage ratio would have been more likely to change auditors in Phase 1. When they changed auditors, they would have been more likely to choose auditors with high reputation in Phases 2 and 3.

The other variables are included as they capture other factors that are likely o affect the choice of auditors. *Accrual* and *Clients* are proxies for switching costs. Following Blouin et al. (2007), we regard switching costs as "the start-up costs incurred by the client for a new audit engagement. These include: (1) costs incurred by the clients in educating the auditor about the company's operations, systems, financial reporting practices, and accounting issues, (2) costs incurred by the clients in selecting a new auditor, and (3) an increased risk of audit failure."

Accrual is calculated by deleting operating cash flow from the sum of net income and extraordinary income/losses, divided by total assets. Firms with high *Accrual* are more aggressive in financial reporting and thus are expected to reduce switching costs by maintaining their relationship with incumbent auditors. Based on the different measure of accruals defined by Jones (1991), Blouin et al. (2007) find that firms with lower accrual changed auditors more frequently, after the Andersen collapse. Bradshaw et al. (2001) also show that auditor changes are less likely for high accrual firms.[7] Thus, we expect that firms with high *Accrual* would have been less likely to change auditors in Phase 1. When they changed auditors, they would have been more likely to choose Misuzu or Aarata in Phases 2 and 3.

Clients is a dummy variable, which takes 1 if ChuoAoyama had the most clients in an industry, and 0 otherwise. This variable shows the area of industry in which ChuoAoyama might have had more expertise than other audit firms. We regard firms with large *Clients* as firms that have high switching costs. Blouin et al. (2007) report a positive relation between following Andersen and *Clients*. Thus, we expect that firms with large *Clients* would have been less likely to change auditors in Phase 1. When they changed auditors, they would have been more likely to choose Misuzu or Aarata in Phases 2 and 3.

The next three variables – *AssetGrowth*, *SalesGrowth*, and *Invrec* – are associated with audit risk. Following Johnston (2000), we regard audit risk as "the risk that the auditor may unknownly fail to appropriately modify his opinion on financial statements that are materially misstated," which is proxied by internal control risk. *AssetGrowth* and *SalesGrowth* are rates of change in assets and sales, respectively. A high growth rate of assets or sales may result from accounting manipulation of firms with poor internal control systems. *Invrec* is defined as the sum of inventories and accounts receivable, divided by total assets. Following Dopuch et al. (1987), Krishnan (1994), and Landsman et al. (2009), we expect that firms with high *Invrec* would have high audit risk. Large inventories or accounts receivables may also result from accounting manipulation. We expect that former ChuoAoyama clients with high audit risk would have been less likely to change auditors in Phase 1. We also expect that former ChuoAoyama or Misuzu clients with high audit risk would have been less likely to switch to the other Big 4 auditors, because the other Big 4 auditors are expected to be more eager to avoid risk that may lead to reputation loss.[8]

The remaining four variables – *Cash*, *ROA*, *Loss*, and *MB* – are associated with a firm's financial risk.[9] *Cash* and *ROA* are the firm's cash and net income divided by total assets. *Loss* is a dummy

[6] Blouin et al. (2007) also consider the possibility that Size proxies switching costs. If this is the case, the sign of coefficients of Size should be opposite to our prediction, because switching costs are expected to be higher for larger clients. However, as revealed in the fifth section, our empirical results are consistent with the idea that Size is a proxy of reputation factors in Phase 2.

[7] Alternatively, DeFond and Subramanyam (1998) report that firms changing auditors have negative discretionary accruals, because auditors prefer conservative accounting choices to reduce litigation risk. Because Japan is a low-litigation country, this incentive of auditors could be minimal.

[8] One may think that there is no reason for Big 4 auditors to avoid high-risk clients in a low-litigation country such as Japan. It is true that the authors of many prior studies assume that the clients' risk is associated with the likelihood of litigation, which makes auditors reconsider the engagement with high-risk clients (Krishnan and Krishnan 1997; Jones and Raghunandan 1998; Shu 2000; Choi et al 2004; Laux and Newman 2010). Alternatively, however, Johnstone (2000) considers engagement profitability as the key component of the auditor's risk of loss upon auditor engagement, which is not necessarily associated with the litigation risk. Thus, even in Japan, known as a low-litigation country, we expect that assessment of clients' risk is important for decision-making regarding auditors,

[9] Johnston (2000) defines financial risk as "the risk that a potential client's economic condition will deteriorate."

variable, which takes 1 if *ROA<0*, and 0 otherwise. *MB* is a market to book ratio, which represents growth prospects of a firm's value. Firms with high financial risk are considered to be less profitable than those with low financial risk. We expect that firms with high financial risk would have been less likely to change auditors in Phase 1. When they changed auditors, they would have been less likely to switch to the other Big 4 auditors in Phases 2 and 3, because the other Big 4 auditors are expected to be more eager to avoid risk that may lead to reputation loss.

After conducting univariate analysis, we then proceed to multivariate analysis. We model the decision to change auditors as a function of variables that capture the degree of a firm's reputation concerns and other control variables. The first binary logistic regression investigates firms' decisions to switch away from ChuoAoyama or follow ChuoAoyama in Phase 1, by using the indicator variable *Change2004*, which takes 1 if the clients moved away from ChuoAoyama and 0 otherwise, as a dependent variable.

The second ordered logistic regression investigates firms' decisions in Phase 2, by using the indicator variable *Change2006*, which takes 3 if the client switched to the other Big 4 audit firms, 2 if switched to Aarata, 1 if switched to Non-Big4 audit firms, and 0 if switched to Misuzu, as a dependent variable (Change2006 is constructed according to our Hypothesis 2). The last binary logistic regression examines firms' decisions to choose the other Big 4 audit firm in Phase 3, by using the indicator variable *Change 2007*, which takes 1 if the client chose the other Big 4 audit firm, and otherwise.

4.2 Data and sample selection

We rely on *Kaisha Shikiho* (*Japan Company Handbook*) CD-ROMs to obtain the data. *Japan Company Handbook* contains major company data, including auditors' names and financial data of all listed firms in Japan. We identify auditor switches when auditors' names are different between two periods (Skinner and Srinivasan (2012) analyze the auditor signatory data and find that between FY2005 and FY2006, 85 percent of Misuzu clients had signatories in common with the FY 2005 ChuoAoyama audits, 76 percent Aarata clients had signatories in common, and none of the other audit firms had any signatories in common. This indicates that most of the clients moving to Misuzu or Aarata follow their audit teams, while those moving to the other audit firms did not). Samples for Phase 1 are based on *Japan Company Handbook* issued in spring 2004 and spring 2005. Samples for Phase 2 are based on *Japan Company Handbook* issued in summer and autumn 2006. Samples for Phase 3 are based on *Japan Company Handbook* issued in summer and autumn 2007.

More precisely, the *Japan Company Handbook* CD-ROMs are issued quarterly - spring (March 15), summer (June 15), autumn (September 15), and winter (December 15). In other words, Phase 1 corresponds to the period between March 15, 2004 and March 15, 2006, that is, the period prior to the FSA's penalty, which was announced in May 10, 2006 and was imposed in July 1, 2006. Likewise, Phase 2 corresponds to the period between June 15 and September 15, 2006, while Phase 3 corresponds to the period between June 15 and September 15, 2007.

It is important to note that the majority of Japanese listed firms employs a fiscal year ending in March and hosts an annual shareholders meeting in the end of June, where auditor switches need to be approved, if any. In other words, Phases 2 and 3 correspond to the timing of the shareholders meetings for most of the listed firms. It is also important that Phase 2 includes the period of suspension of ChuoAoyama's auditing services, which was between July 1 and September 1, 2006, when many ChuoAoyama clients were forced to appoint an interim auditor and then moved to Misuzu or other audit firms after the end of the suspension, i.e., September 1, 2006 (Unlike Skinner and Srinivasan (2012), we do not differentiate the sample data based on the interim auditor. Our data simply show auditors before and after the period of the suspension. It is also worth noting that not a few firms did not appoint an interim auditor and just moved to Misuzu on September 1, 2006).

Table 3 shows the sample selection process. Panels A to C correspond to Phases 1 to 3, respectively.

Table 3. Sample selection process

Panels A to C show the sample selection process for Phases 1 to 3.

Panel A: Sample selection for Phase 1

	Total	ChuoAoyama	Other auditors
Listed firms audited by ChuoAoyama	744	719	25
less: firms without consolidated statements,			
prior statements, and other financial variables	211	200	11
Final sample	533	519	14

Panel: B: Sample selection for Phase 2

	Total	Misuzu	Aarata	Big 4	Non-Big 4
Listed firms audited by ChuoAoyama	721	525	71	125	94
less: firms without consolidated statements,					
prior statements, and other financial variables	122	140	17	36	23
Final sample	599	385	54	89	71

Panel: C: Sample selection for Phase 3

	Total	Big 4	Non-Big 4
Listed firms audited by Misuzu	537	426	111
less: firms without consolidated statements,			
prior statements, and other financial variables	140	111	29
Final sample	397	315	82
Note: Aarata is included in Big 4.			

For Phase 1, we first make a list of ChuoAoyama clients. The initial sample of the listed ChuoAoyama clients consists of 744 firms, of which 719 firms followed ChuoAoyama, while 25 firms switched auditors. We then eliminate the following firms: (1) firms without consolidated statements, (2) firms without prior statements, and (3) firms lacking other financial variables for logistic analysis. The final sample consists of 533 client firms of which 519 firms followed ChuoAoyama, while 14 firms switched auditors.

For Phase 2, our initial sample consists of 815 listed ChuoAoyama clients, of which 596 firms moved to Misuzu or Aarata, while 125 firms switched to the other Big 4 audit firms and 94 firms switched to Non-Big 4 auditors. The same elimination process gives the final sample, consisting of 599 client firms, of which 439 firms moved to Misuzu or Aarata, while 71 firms switched to the other Big 4 audit firms and 89 firms switched to Non-Big 4 auditors.

For Phase 3, we first make a list of Misuzu clients. The initial sample was 537 listed Misuzu clients, of which 426 firms switched to the other Big 4 auditors, while 111 firms switched to Non-Big 4 auditors. The same elimination process gives the final sample, consisting of 397 client firms, of which 315 firms switched to the other Big 4 audit firms and 82 firms switched to Non-Big 4 auditors.

Table 4. Descriptive statistics of regression variables

Panel A: Descriptive statistics of variables for Phase 1

	Emerging	*Foreign*	*Size*	*Leverage*	*Accrual*	*Clients*	*AssetGrowth*	*SalesGrowth*	*Invrec*	*Cash*	*ROA*	*Loss*	*MB*
Mean	0.26	5.76	10.65	0.55	-0.03	0.16	-0.01	0.03	0.34	0.15	0.01	0.26	1.22
Median	0.00	1.90	10.42	0.57	-0.03	0.00	-0.02	0.01	0.33	0.11	0.01	0.00	0.76
Maximum	1.00	65.80	15.94	1.00	0.48	1.00	1.05	0.88	0.91	0.82	0.51	1.00	51.65
Minimum	0.00	0.00	7.18	0.02	-0.46	0.00	-0.63	-0.73	0.01	0.00	-0.82	0.00	0.09
Std. Dev.	0.44	8.63	1.53	0.22	0.07	0.37	0.15	0.14	0.17	0.12	0.07	0.44	2.73
Skewness	1.10	2.51	0.65	-0.17	0.40	1.86	2.18	0.90	0.45	1.98	-3.60	1.08	14.25
Kurtosis	2.21	11.84	3.34	2.26	15.04	4.46	15.38	11.03	3.15	8.02	43.04	2.16	243.57
Observations	533	533	533	533	533	533	533	533	533	533	533	533	533

Panel B: Descriptive statistics of variables for Phase 2

	Emerging	*Foreign*	*Size*	*Leverage*	*Accrual*	*Clients*	*AssetGrowth*	*SalesGrowth*	*Invrec*	*Cash*	*ROA*	*Loss*	*MB*
Mean	0.27	9.75	10.74	0.53	-0.01	0.17	0.14	0.11	0.35	0.15	0.03	0.13	2.45
Median	0.00	6.20	10.51	0.54	-0.02	0.00	0.06	0.06	0.34	0.11	0.03	0.00	1.53
Maximum	1.00	62.60	17.17	1.02	0.44	1.00	6.24	2.17	0.91	0.74	0.56	1.00	63.43
Minimum	0.00	0.00	6.85	0.05	-0.31	0.00	-0.53	-0.35	0.02	0.00	-1.02	0.00	-13.87
Std. Dev.	0.44	10.67	1.60	0.20	0.07	0.37	0.47	0.25	0.17	0.13	0.07	0.33	4.08
Skewness	1.03	1.62	0.72	-0.04	2.37	1.79	8.16	4.26	0.46	1.78	-4.87	2.22	8.19
Kurtosis	2.07	6.11	3.71	2.26	16.40	4.19	85.80	27.37	3.11	6.60	83.34	5.93	101.13
Observations	599	599	599	599	599	599	599	599	599	599	599	599	599

Panel C: Descriptive statistics of variables for Phase 3

	Emerging	*Foreign*	*Size*	*Leverage*	*Accrual*	-	*AssetGrowth*	*SalesGrowth*	*Invrec*	*Cash*	*ROA*	*Loss*	*MB*
Mean	0.32	9.46	10.52	0.53	-0.01	-	0.09	0.11	0.37	0.15	0.02	0.16	1.70
Median	0.00	5.60	10.32	0.54	-0.02	-	0.05	0.07	0.35	0.11	0.03	0.00	1.24
Maximum	1.00	53.20	16.73	0.97	0.44	-	2.32	2.98	0.95	0.66	0.20	1.00	19.59
Minimum	0.00	0.00	6.95	0.06	-0.23	-	-0.30	-0.47	0.01	0.00	-0.54	0.00	0.28
Std. Dev.	0.47	10.44	1.50	0.19	0.07	-	0.24	0.27	0.18	0.12	0.07	0.37	1.64
Skewness	0.76	1.49	0.69	-0.07	1.29	-	5.21	5.75	0.47	1.61	-2.95	1.87	4.89
Kurtosis	1.58	5.11	3.91	2.31	10.77	-	40.82	52.66	3.10	5.75	20.30	4.49	42.89
Observations	397	397	397	397	397	-	397	397	397	397	397	397	397

Table 5. Pearson correlation matrices

Panel A: Correlation matrix for Phase 1

	Emerging	*Foreign*	*Size*	*Leverage*	*Accrual*	*Clients*	*AssetGrowth*	*SalesGrowth*	*Invrec*	*Cash*	*ROA*	*Loss*	*MB*
Emerging	1.000												
Foreign	-0.192	1.000											
Size	-0.510	0.428	1.000										
Leverage	-0.080	-0.175	0.230	1.000									
Accrual	0.144	-0.067	-0.135	-0.048	1.000								
Clients	-0.140	0.135	0.205	0.060	-0.097	1.000							
AssetGrowth	0.167	0.097	-0.149	-0.175	0.153	-0.059	1.000						
SalesGrowth	0.127	0.127	-0.064	-0.102	-0.027	0.027	0.548	1.000					
Invrec	0.061	-0.087	0.006	0.273	0.157	0.099	-0.083	0.019	1.000				
Cash	0.264	0.190	-0.285	-0.458	0.018	-0.189	0.212	0.121	-0.224	1.000			
ROA	-0.020	0.137	0.041	-0.172	0.133	-0.041	0.447	0.347	-0.025	0.113	1.000		
Loss	0.066	-0.131	-0.067	0.185	-0.048	-0.015	-0.305	-0.204	0.106	-0.085	-0.559	1.000	
MB	-0.032	0.158	0.027	0.093	-0.050	-0.073	0.118	0.137	-0.004	0.172	0.109	0.007	1.000

Panel B: Correlation matrix for Phase 2

	Emerging	*Foreign*	*Size*	*Leverage*	*Accrual*	*Clients*	*AssetGrowth*	*SalesGrowth*	*Invrec*	*Cash*	*ROA*	*Loss*	*MB*
Emerging	1.000												
Foreign	-0.213	1.000											
Size	-0.512	0.543	1.000										
Leverage	-0.047	-0.155	0.161	1.000									
Accrual	0.151	0.049	-0.072	0.040	1.000								
Clients	-0.111	0.168	0.225	0.068	-0.010	1.000							
AssetGrowth	0.194	0.027	-0.107	-0.097	0.289	-0.004	1.000						
SalesGrowth	0.122	0.042	-0.062	-0.035	0.348	0.022	0.663	1.000					
Invrec	0.036	-0.035	-0.009	0.265	0.301	0.113	-0.046	0.022	1.000				
Cash	0.319	0.013	-0.323	-0.423	0.023	-0.208	0.347	0.212	-0.260	1.000			
ROA	-0.031	0.173	0.084	-0.198	0.157	0.049	0.117	0.129	-0.036	0.119	1.000		
Loss	0.047	-0.147	-0.159	0.153	-0.070	-0.038	-0.111	-0.059	-0.016	-0.036	-0.510	1.000	
MB	0.134	0.049	-0.140	-0.057	0.120	-0.040	0.514	0.494	-0.075	0.380	0.223	-0.072	1.000

Panel C: Correlation matrix for Phase 3

	Emerging	*Foreign*	*Size*	*Leverage*	*Accrual*	-	*AssetGrowth*	*SalesGrowth*	*Invrec*	*Cash*	*ROA*	*Loss*	*MB*
Emerging	1.000												
Foreign	-0.204	1.000											
Size	-0.513	0.576	1.000										
Leverage	-0.084	-0.147	0.146	1.000									
Accrual	0.041	-0.014	0.000	0.037	1.000								
AssetGrowth	0.113	0.089	-0.046	-0.007	0.444	-	1.000						
SalesGrowth	0.167	0.110	-0.015	-0.012	0.216	-	0.649	1.000					
Invrec	-0.025	0.064	0.129	0.332	0.284	-	0.086	0.066	1.000				
Cash	0.337	0.004	-0.328	-0.387	-0.104	-	0.207	0.116	-0.282	1.000			
ROA	-0.104	0.047	0.090	-0.312	0.171	-	0.252	0.117	-0.106	0.172	1.000		
Loss	0.069	-0.081	-0.160	0.185	-0.185	-	-0.116	0.010	0.028	-0.035	-0.656	1.000	
MB	0.090	0.105	-0.062	0.039	0.149	-	0.432	0.207	-0.050	0.223	0.165	-0.004	1.000

Descriptive statistics of independent variables are presented in panels A to C of Table 4. Table 5 presents a Pearson correlation matrix for the independent variables. Panels A to C correspond to Phases 1 to 3, respectively. High correlation is observed between *Emerging* and *Size* (-0.51) for all panels, which is reasonable, because large and established stock exchanges such as the Tokyo Stock Exchange allow only large firms to be listed. *Foreign* and *Size* (0.43~0.58) are also highly correlated. Not surprisingly, the correlation between *AssetGrowth* and *SalesGrowth* (0.55 ~ 0.66) is also high. By definition, the correlation between *ROA* and *Loss* (-0.51 ~ -0.66) is high, too.

5. Empirical results

5.1 Univariate analyses

Table 6 presents the results of univariate analyses of the relationship between the selection of new auditors and reputation factors. Panels A, B and C correspond to Phases 1, 3, and 2, respectively. Panel A compares four reputation factors between firms switching to the other auditors and those staying at ChuoAoyama in Phase 1, showing that differences between two groups of firms are statistically significant for both the mean and median of *Size*. The negative sign of *Size* indicates that firms switching away from ChuoAoyama were more likely to have smaller amounts of assets. This result is not consistent with our prediction that firms more concerned about reputation tended to switch away from ChuoAoyama.

Table 6. Univariate analyses on reputation factors in different phases

Panel A: Reputation factors in auditor switches for Phase 1

	Other auditors (A)			ChuoAoyama (B)			Differences (A) - (B)				Expected sign
	Obs.	Mean	Median	Obs.	Mean	Median	Mean	(t-value)	Median	(t-value)	
Emerging	14	0.43	0.00	519	0.25	0.00	0.17	(1.26)	0.00	(0.00)	-
Foreign	14	4.64	1.75	519	5.79	1.90	-1.16	-(0.63)	-0.15	-(0.08)	+
Size	14	10.09	9.94	519	10.66	10.44	-0.58	-(2.24) **	-0.50	-(1.95) *	+
Leverage	14	0.61	0.63	519	0.55	0.57	0.05	(0.98)	0.06	(1.04)	+

Note: ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

Panel B: Reputation factors in auditor switches for Phase 3

	Big 4 (A)			Non-Big 4 (B)			Differences (A) - (B)				Expected sign
	Obs.	Mean	Median	Obs.	Mean	Median	Mean	(t-value)	Median	(t-value)	
Emerging	315	0.31	0.00	82	0.37	0.00	-0.05	-(0.92)	0.00	(0.00)	-
Foreign	315	9.69	6.40	82	8.56	3.15	1.13	(0.81)	3.25	(2.32) **	+
Size	315	10.61	10.42	82	10.20	10.02	0.40	(2.00) **	0.39	(1.95) **	+
Leverage	315	0.53	0.54	82	0.54	0.55	-0.01	-(0.39)	-0.02	-(0.69)	+

Note: 1.***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.
2. Aarata is included in Big 4.

Panel C-1: Reputation factors in auditor switches for Phase 2

	Other Big 4 (A)			Aarata (B)			Non-Big 4 (C)			Misuzu (D)		
	Obs.	Mean	Median	Obs.	Mean	Median	Obs.	Mean	Median	Obs.	Mean	Median
Emerging	89	0.16	0.00	54	0.19	0.00	71	0.20	0.00	385	0.32	0.00
Foreign	89	13.34	10.40	54	12.29	7.05	71	8.23	5.30	385	8.85	5.10
Size	89	11.41	11.18	54	11.60	11.06	71	10.60	10.35	385	10.49	10.33
Leverage	89	0.55	0.54	54	0.50	0.53	71	0.55	0.57	385	0.53	0.54

Panel C-2: Differences from Aarata and Misuzu

Differences from Aarata

	Other Big 4: (A) -(B)				Expected sign
	Mean	(t-value)	Median	(t-value)	
Emerging	-0.03	-(0.42)	0.00	(0.00)	-
Foreign	1.05	(0.46)	3.35	(1.45) *	+
Size	-0.19	-(0.59)	0.12	(0.38)	+
Leverage	0.05	(1.45) *	0.02	(0.55)	+
	Non-Big 4: (B) -(C)				Expected sign
	Mean	(t-value)	Median	(t-value)	
Emerging	-0.01	-(0.18)	0.00	(0.00)	-
Foreign	4.06	(1.76) *	1.75	(0.76)	+
Size	1.01	(3.12) ***	0.70	(2.18) **	+
Leverage	-0.06	-(1.68) *	-0.05	-(1.39) *	+
	Misuzu: (B) -(D)				Expected sign
	Mean	(t-value)	Median	(t-value)	
Emerging	-0.14	-(2.07) **	0.00	(0.00)	-
Foreign	3.43	(1.49) *	1.95	(0.84)	+
Size	1.11	(3.44) ***	0.73	(2.25) **	+
Leverage	-0.03	-(0.89)	-0.01	-(0.38)	+

Differences from Misuzu

	Other Big 4: (A) -(D)				Expected sign
	Mean	(t-value)	Median	(t-value)	
Emerging	-0.16	-(2.50) ***	0.00	(0.00)	-
Foreign	4.49	(1.94) **	5.30	(2.30) **	+
Size	0.92	(2.85) ***	0.85	(2.63) ***	+
Leverage	0.02	(0.57)	0.01	(0.16)	+
	Non-Big 4: (C) -(D)				Expected sign
	Mean	(t-value)	Median	(t-value)	
Emerging	-0.12	-(1.89) **	0.00	(0.00)	-
Foreign	-0.63	-(0.27)	0.20	(0.09)	+
Size	0.10	(0.32)	0.02	(0.07)	+
Leverage	0.03	(0.80)	0.03	(1.01)	+

Note: ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

Panel B compares four reputation factors between firms switching to the other Big 4 auditors and those switching to Non-Big 4 auditors in Phase 3, showing that differences between two groups of firms are statistically significant for the mean and median of *Size* and for the median of *Foreign*. The signs of these variables indicate that firms with a higher foreign shareholders ratio and larger amounts of assets were more likely to switch to the other Big 4 audit firms. These results are consistent with our

prediction that firms more concerned about reputation tended to switch to the other Big 4 auditors.

Panel C-1 presents both the mean and median of reputation factors for firms switching to the other Big 4 auditors, Aarata, Non-Big 4 auditors, and Misuzu in Phase 2. Panel C-2 compares four reputation factors among these four groups of firms, providing the following findings: First, differences between Aarata and the other Big 4 auditors are statistically significant at the 10% level for the mean of *Leverage* and for the median of *Foreign*. Likewise, differences between Aarata and Non-Big 4 auditors are statistically significant for both the mean and median of two variables (*Size* and *Leverage*) and for the mean of one variable (*Foreign*), and so are differences between Aarata and Misuzu for the mean and median of one variable (*Size*) and for the mean of two variables (*Emerging* and *Foreign*). The signs of differences indicate that firms more concerned about reputation preferred the other Big 4 auditors to Aarata, while they preferred Aarata to Non-Big 4 auditors and Misuzu. We also note that the mean and median of reputation factors are quite different between firms choosing Aarata and those choosing Non-Big 4 auditors and Misuzu, but not much different between firms choosing Aarata and those choosing the other Big 4 audit firms.

Similarly, differences between Misuzu and the other Big 4 auditors are statistically significant for the mean and median of two variables (*Foreign* and *Size*) and for the mean of one variable (*Emerging)*, while differences between Misuzu and Non-Big 4 auditors are significant only for the mean of one variable (*Emerging*). In other words, the mean and median of reputation factors are not much different between firms choosing Non-Big 4 audit firms and those choosing Misuzu, while they are quite different between firms choosing Misuzu and those choosing the other Big 4 auditors. In addition, the signs of differences indicate that firms concerned about reputation preferred the other Big 4 auditors and Non-Big 4 auditors to Misuzu.

Combining these findings for Phase 2, we can conclude that reputation factors more greatly affected the selection of new auditors for firms choosing the other Big 4 audit firms and Aarata than for those choosing Non-Big 4 audit firms and Misuzu. In addition, the differences between the other Big 4 audit firms and Aarata are quite small, as only one variable is significantly different. Likewise, the differences between Non-Big 4 audit firms and Misuzu are also small, because only one variable is significantly different. This indicates that PwC's attempt to preserve its reputation by establishing Aarata seems to have been successful, while Misuzu was considered to have audit quality as low as that of the Non-Big 4 audit firms.

Table 7. Comparison of reputation factors between firms in difference phases

Panel A: Comparison between firms switching to other auditors in Phase 1 and those in Phase 2

	Other auditors in Phase 1 (A)			Other auditors in Phase 2 (B)			Differences: (A) - (B)				Expected
	Obs.	Mean	Median	Obs.	Mean	Median	Mean	(t-value)	Median	(t-value)	sign
Emerging	14	0.43	0.00	160	0.18	0.00	0.25	(1.80) **	0.00	(0.00)	+
Foreign	14	4.64	1.75	160	11.07	7.65	-6.43	-(3.19) ***	-5.90	-(2.92) ***	-
Size	14	10.09	9.94	160	11.05	10.86	-0.96	-(3.43) ***	-0.92	-(3.27) ***	-
Leverage	14	0.61	0.63	160	0.55	0.55	0.06	(1.02)	0.08	(1.43) *	-

Note: 1. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.
2. Other auditors include both Big 4 and Non-Big 4 auditors.

Panel B: Comparison between firms choosing other Big 4 auditors in Phase 2 and those in Phase 3

	Big 4 in Phase 2 (A)			Big 4 in Phase 3 (B)			Differences: (A) - (B)				Expected
	Obs.	Mean	Median	Obs.	Mean	Median	Mean	(t-value)	Median	(t-value)	sign
Emerging	143	0.17	0.00	315	0.20	0.00	-0.14	-(3.51) ***	0.00	(0.00)	-
Foreign	143	12.94	8.20	315	8.23	5.30	3.25	(2.68) ***	1.80	(1.48) *	+
Size	143	11.48	11.15	315	10.60	10.35	0.88	(5.05) ***	0.73	(4.22) ***	+
Leverage	143	0.53	0.53	315	0.55	0.57	0.00	(0.01)	-0.00	-(0.13)	+

Notes: 1. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.
2. Aarata is included in Big4 for both phases.

Next, we compare reputation factors between firms doing the same selection in different phases. Table 7 presents the results: Panel A presents a comparison between firms switching to other auditors in Phase 1 and those switching in Phase 2. Other auditors here include both Big 4 and Non-Big 4 auditors, because very few firms switched away from ChuoAoyama in Phase 1, as shown in Table 2. Panel B compares reputation factors between firms choosing Big 4 auditors in Phase 2 and those switching in Phase 3. Big 4 auditors here include Aarata, because very few firms switched away from Misuzu to Aarata in Phase 3, as shown in Table 2.

First, Panel A shows that the difference of firms switching to other auditors between Phase 1 and Phase 2 is statistically significant at the 1% level for the mean and median of two variables (*Foreign* and *Size*), at the 5% level for the mean of *Emerging*, and

at the 10% level for the median of *Leverage*. The signs of differences are consistent with our predictions, except for *Leverage*, the significance level of which is relatively low. Our results indicate that firms listed on established stock exchanges, firms with higher foreign shareholders ratios, and firms with larger amounts of assets decided to switch auditors more often in Phase 2 than in Phase 1. This means that former ChuoAoyama clients switching to other auditors were more concerned about reputation for audit quality in Phase 2 than in Phase 1, as the official agencies announced penalties on Kanebo and ChuoAoyama in 2006.

Panel B shows that differences of firms switching to the other Big 4 audit firms between Phase 2 and Phase 3 are statistically significant for the mean and median of two variables (*Foreign* and *Size*) and for the mean of *Emerging*. The signs of differences indicate that firms listed on established stock exchanges, firms with higher foreign shareholders ratios, and firms with larger amounts of assets decided to switch to the other Big 4 auditors more often in Phase 2 than in Phase 3. This means that firms switching to the other Big 4 auditors were less concerned about reputation in Phase 3 than in Phase 2.

In sum, our comparison of reputation factors over time indicates that reputation factors more greatly affected auditor switches of former ChuoAoyama clients in Phase 2 than in Phases 1 and 3. The decreased effect of reputation in Phase 3 is particularly of interest, because it suggests the following possibilities. First, capacity constraints of big audit firms may have become severer in Phase 3 than in Phase 2. Second, differences in perceived audit quality between Big 4 and Non-Big 4 auditors may have decreased after the ChuoAoyama scandal and the introduction of the J-SOX, even though these events were likely to increase the demand for quality audits at the same time.

5.2 Multivariate analyses

To conduct multivariate analyses we estimate the logistic models (1) to (3) shown in the previous section. Table 8 presents the regression results. For regression (1), no variables representing reputation factors are statistically significant. This indicates that auditor switches from ChuoAoyama may not have reflected the reputation loss in Phase 1. Instead, two variables representing audit risk (*AssetGrowth)* and financial risk (*ROA*) are statistically significant at the 1% level, indicating that firms with greater audit risk and higher financial risk tended to change auditors in Phase 1.

Table 8. Auditor switch logistic regressions

This table shows the results of three regressions. The dependent variables are *Change2004*, *Change2006*, and *Change 2007*. Variable definitions are in Appendix.

	Expected sign	Regression (1) *Change2004*		Regression (2) *Change 2006 (model a)*		Regression (2) *Change 2006 (model b)*		Regression (3) *Change 2007*	
		Coefficient	z-Statistic	Coefficient	z-Statistic	Coefficient	z-Statistic	Coefficient	z-Statistic
Emerging	-	0.036	(0.05)	-0.472	-(1.89) *	-0.495	-(1.99) **	0.239	(0.71)
Foreign	+	0.007	(0.15)	0.002	(0.25)	0.001	(0.12)	-0.004	-(0.24)
Size	+	-0.153	-(0.55)	0.236	(3.07) ***	0.230	(3.04) ***	0.188	(1.41)
Leverage	-	2.496	(1.38)	0.135	(0.26)	0.151	(0.29)	-0.410	-(0.51)
Accrual	-	3.614	(1.24)	-1.187	-(0.74)				
Clients	-	0.893	(1.13)	-0.212	-(0.89)				
AssetGrowth	-	3.689	(2.80) ***	-0.129	-(0.46)	-0.178	-(0.63)	0.491	(0.66)
SalesGrowth	-	0.814	(0.45)	0.169	(0.36)	0.080	(0.17)	-1.118	-(1.72) *
Invrec	-	-1.039	-(0.55)	0.159	(0.29)	0.001	(0.00)	0.846	(1.09)
Cash	+	3.151	(1.17)	0.614	(0.69)	0.752	(0.85)	-0.340	-(0.27)
ROA	+	-7.843	-(2.83) ***	-0.511	-(0.36)	-0.725	-(0.52)	1.014	(0.41)
Loss	-	-0.060	-(0.08)	0.243	(0.81)	0.222	(0.74)	-0.615	-(1.44)
MB	+	-0.213	-(0.65)	0.058	(2.19) **	0.060	(2.31) **	-0.039	-(0.46)
Obs.		533		599		599		397	
LR stat		20.875 *		38.919 ***		37.654 ***		17.379 *	
Pseudo-R^2		16.12%		3.13%		3.03%		4.30%	

Note: ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

For regression (2), two variables (*Emerging* and *Size*) are statistically significant for two models and their signs are consistent with our predictions. Specifically, the coefficients on *Emerging* are significantly negative at the 10% and 5% levels for models a and b, respectively, while the coefficients on *Size* are significantly positive at the 1% level for both models. This result indicates that reputation factors affected the selection of new auditors for former ChuoAoyama clients in Phase 2. Among control variables, only the coefficients on *MB* are

significantly positive at the 5% level, and its sign is consistent with our prediction.

For regression (3), no variables representing reputation factors are statistically significant. This indicates that auditor switches from Misuzu may not have reflected reputation concerns. Among control variables, only the coefficient on *SalesGrowth* is significantly negative at the 1% level. This is consistent with our prediction, indicating that firms with greater audit risk tended to choose Non-Big 4 audit firms rather than Big 4 audit firms.

In sum, our regression analyses detect the effect of reputation factors on auditor switches of former ChuoAoyama clients only in Phase 2 and not in Phase 1 or Phase 3. The observed concerns for reputation factors in Phase 2 are consistent with our univariate analyses and prior studies including those of Numata and Takeda (2010) and Skinner and Srinivasan (2012). As discussed in the previous subsection, the possible reasons why we cannot find significant impacts of reputation factors in Phases 1 and 3 are as follows. First, the ChuoAoyama scandal was the first large accounting scandal that triggered the severest penalties imposed by the FSA. Thus, former ChuoAoyama clients may not have been concerned much about the reputation loss of their auditors until the FSA announced the suspension of statutory auditing services in May 2006, which was between Phases 1 and 2. Auditor switches based on reputation concerns were best observed in Phase 2, which includes the period of suspension (July 1 – September 1, 2006).

Second, when Misuzu collapsed, its clients had fewer choices of auditors probably because of capacity constraints. In addition, the audit failure of ChuoAoyama and the introduction of the J-SOX may have decreased the differences in perceived audit quality between Big 4 and Non-Big 4 audit firms. Thus, many former Misuzu clients were likely to follow existing audit team moving to a new audit firm rather than carefully considering the reputation of new audit firms.[10] The results of our multivariate analyses are basically consistent with those of our univariate analyses.

6. Concluding remarks

We investigated how reputation factors affected the selection of new auditors by former ChuoAoyama clients after the scandals of ChuoAoyama and its successor, Misuzu. We found that former ChuoAoyama clients concerned about reputation for audit quality tended to change auditors during the period between summer and autumn 2006, when statutory auditing services of ChuoAoyama were suspended. When changing auditors, these clients were likely to switch to the other Big 4 audit firms or to Aarata. Our results also indicate that auditors' sensitivity to reputation factors decreased in summer and autumn 2007, probably due to intensified capacity constraints and the decreased differences in perceived audit quality between Big 4 and Non-Big 4 audit firms after the scandal and the introduction of the J-SOX.

[10] Skinner and Srinivasan (2012) show that 56% of former ChuoAoyama clients had no signatory in common on their auditor reports between FY 2007 and FY 2005, while 44% had at least one common signatory. This indicates that many former ChuoAoyama clients followed existing auditors moving to a new audit firm. This also contrasts auditor switches between FY 2006 and FY 2005 when no common signatory is found in switches from ChuoAoyama to the other Big 4 auditors.

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Appendix: Variable definitions

Variable name		Definition
Emerging	=	1 if the client is listed on an emerging stock exchange including JASDAQ, Mothers, and Heracles, and 0 otherwise.
Foreign	=	Foreign shareholders' ratio of total shareholders (%).
Size	=	Natural logarithm of total assets.
Leverage	=	Ratio of total debts to total assets (%).
Accrual	=	{(net income + extraordinary income/losses)- operating cash flow}/total assets (%).
Clients	=	1 if ChuoAoyama had the most clients in an industry, and 0 otherwise.
AssetGrowth	=	Growth rate in total assets from the previous settlement (%).
SalesGrowth	=	Growth rate in sales from the previous settlement (%).
Invrec	=	Inventories plus accounts receivables, divided by total assets (%).
Cash	=	Cash divided by total assets (%).
ROA	=	Return on assets, defined as net income divided by total assets (%).
Loss	=	1 if *ROA<0*, and 0 otherwise.
MB	=	Market to book ratio (%).
Change2004	=	1 if the clients moved away from ChuoAoyama, and 0 otherwise.
Change2006	=	3 if the client switched to the other Big 4 audit firms, 2 if switched to Aarata, 1 if switched to Non-Big4 audit firms, and 0 if switched to Misuzu.
Change2007	=	1 if the client chose the other Big 4 audit firm, and 0 otherwise.